National Electronic Commerce Coordinating Council

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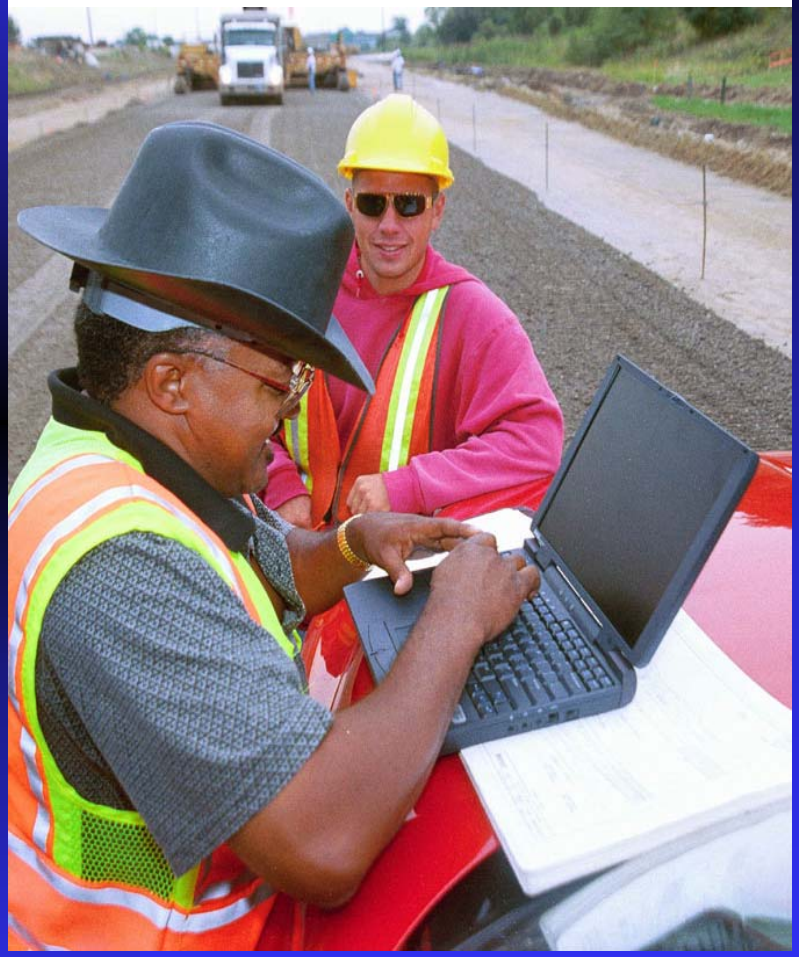

FieldManager

Quality, Flexibility and an Innovative Partnership

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FieldManager Overview

What is FieldManager?

FieldManager is a highly innovative suite of software used to manage and track road and bridge construction projects. It is used by Department Of Transportation (DOT) field offices, local government agencies and private engineering firms.

Business Functions Include

- Work Item Progress
- Inspector's Daily Reports
- Project Engineer's Daily Diaries
- Contractor Payments
- Stockpile Management
- Contract Modifications
- Material Usage

FieldManager Suite Components

- FieldManager is main component in group of allied companion products
- FieldBook enables inspectors at construction sites to create inspector daily reports using a notebook computer
- FieldBuilder allows construction projects to be entered directly in FieldManager when stand-alone operation is desired

FieldManager Suite Components (cont.)

- FieldPad enables inspectors at construction sites to create inspector daily reports using a hand held device operating in Windows CE
- FieldManager can interface with central office systems such as AASHTO's Construction Administration System

FieldManager User Base In Michigan

- Over 1,200 users at 241 facilities:
  - 41 MDOT Transportation Service Centers (TSCs) and project offices
  - 123 counties and cities
  - 77 private engineering firms

Production Evolution

- Initial release 2.1 statewide roll-out:
  - Began in July 1998
  - Completed in May 1999
- Release 3.0 implemented statewide in 2000
- Release 3.1 implemented statewide in 2001
- Periodic product updates available via Web

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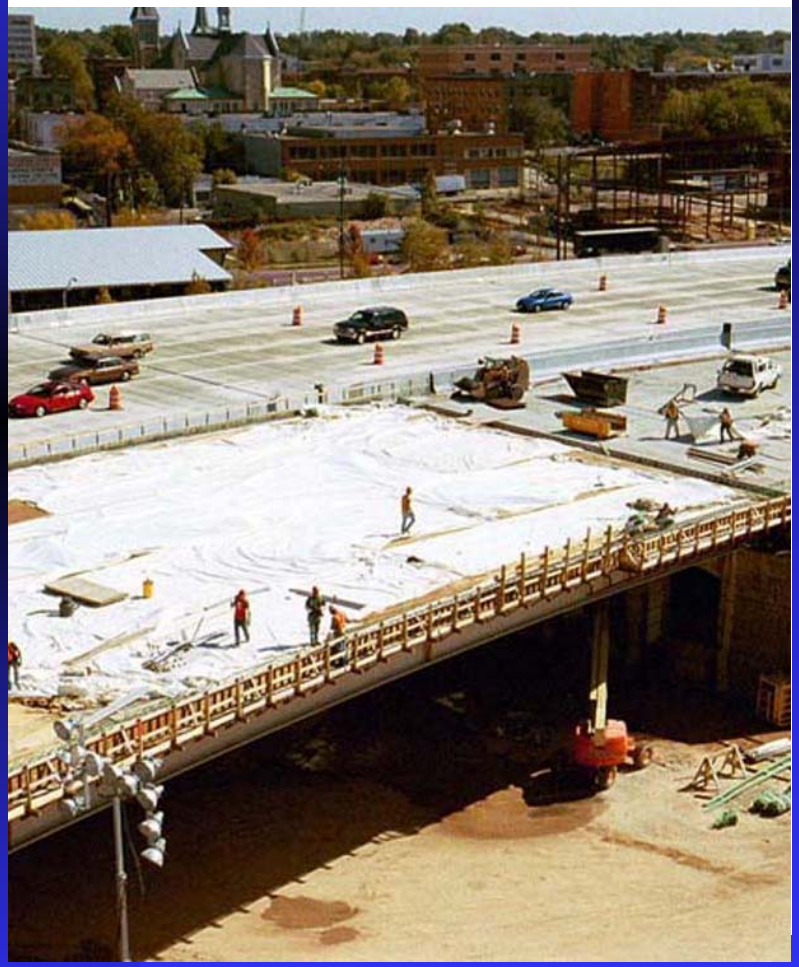

Strategic Impact

Challenges

- Staff reduced by 40%:
  - 1993 – 5,000 employees
  - 2001 – 3,000 employees
- Road/bridge construction program tripled:
  - 1993 – $523 million
  - 2001 - $1.5 billion
- Construction schedules accelerated
- Needed to achieve dramatic new speed and efficiency

MDOT decided we must give the workers who manage our construction projects the IT tools they need to get the job done.

Vision

- Reduce paperwork (allow inspectors to inspect – not fill out forms)
- Capture data one time at its source
- Standardize process statewide
- Enforce rules and procedures through extensive error checking, edits, and warnings

Vision (cont.)

- Provide common tool to MDOT, locals, and private consultants alike
  - Large and diversified user base
  - Avoid requiring locals to pay license fee
  - Provide to consultants at reasonable cost
  - Ensure proper support is provided
- Negotiate partnership agreement with Info Tech

Build In Flexibility

- Develop Agency Configuration Program to allow agencies to customize FieldManager for their organization:
  - Allow use by MDOT offices, local agencies, private firms, other states, other countries
  - Allow organizations to more easily adjust to business process changes

Development Approach

- Business drives technology
- Phased approach
- Commitment to quality up front
- Clear requirements (many, many JADs)
- JADs include MDOT business, MDOT IT, Info Tech, other states
- Focus on standards

Know Thy User

- Involve users extensively throughout project
- Listen (many functions and ideas based on suggestions from user community)
- Design for novice user
- Build in expert user features

Know Thy User (cont.)

- Be visible (communication is two way street)
- Speak at conferences, meetings, etc.
- Provide information via existing publications when possible
- Conduct user surveys
- Establish user groups
- Encourage users to provide both good and bad feedback

Team Dynamics

- Team allowed to operate independently - but with accountability
- Full support from MDOT executive sponsors
- Team fully committed to excellence!

Business Results

- Transformed project management in road construction industry throughout Michigan
- Processed all road/bridge projects involving federal and/or state funds since May of 1999 ($4 billion)
- Construction projects are completed faster and motorists are experiencing fewer delays around construction sites
- Financial benefits exceeding expectations
  - Projected: $16.8 million
  - Actual: $21.9 million

Business Results (cont.)

- Excellent acceptance at all user levels:
  - State, local agencies, private consultants
  - Managers, engineers, technicians, inspectors, clerks
- Improved communication throughout industry
- Exceptional quality has allowed us to focus on future – not production or functionality problems
- Significant growth beyond Michigan
- Vision is being realized!

Future Vision

- Committed to continuous improvement
- Maintenance releases (using 17% rule):
  - Release 3.2 in 2002
  - Release 3.3 in 2003
- Use by our road/bridge construction contractor partners
- Use on Aeronautics projects

Future Vision (cont.)

- Utilize handheld technology (FieldPad)
- Improve telecommunications (FieldNet)
- Warranty management
- Contractor evaluations
- Materials testing interface with Laboratory Information Management System (LIMS)

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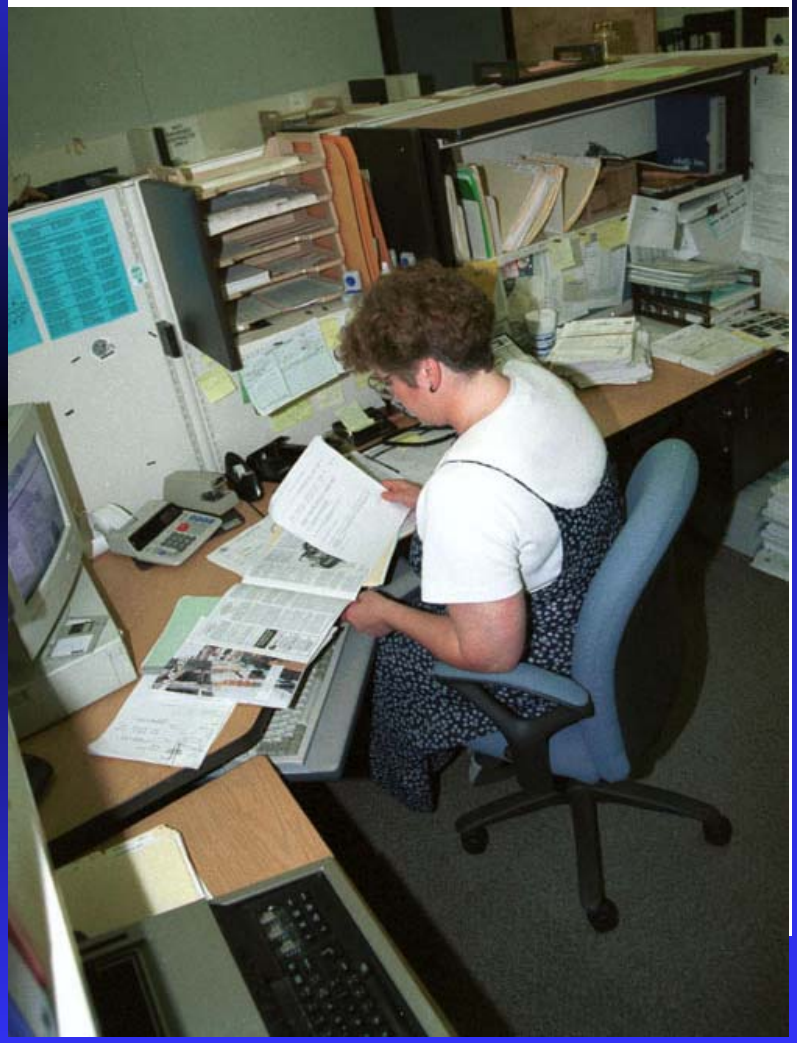

Operational Impact

FieldManager Technical Architecture

- PowerBuilder
- Info Tech, Inc. GUI Object Model
- C using Microsoft Developer Studio 97
- Sybase SQL Anywhere
- ODBC Compliant
- Can operate in a client/server environment
- Can operate as a stand alone system

MDOT Environment

- Netware 4.2 Servers
- Windows NT 4.0, Windows 95 and Windows 2000 Clients
- MDOT Offices Operate as LANs
- Access via WAN

FieldManager Automation Standards

- Windows Based
- Windows Standards Compliant
- Application Specific GUI Standards Established
  - Look and Feel
    - Colors, List Windows, Tab Dialogs
    - Sort, Filter, Column Manipulation

FieldManager Automation Standards

- Designed for the Novice User
  - CPRKS Users can Transition Without a Learning Curve
  - Exceptional Intuitive Interface
- Expert User Features Built In
  - Dynamic Application Access
  - Add Elements to Lists On the Fly
  - Split Items List Functionality
  - Selected Group Functions

Development & Enhancements

- User Participation In Requirements Definition
  - Users Presence in JAD sessions
- User Participation In Future Vision
  - User Comments
  - User Suggestions
  - User Feedback
  - User Group
  - User Surveys
  - FieldManager Helpline

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Business Impact

FieldManager / FieldBook Impact

- IDRs (Inspector Daily Reports)
  - Each office tech saves 152 minutes per day
  - Each inspector saves 39 minutes per day
- Estimates
  - Each office tech saves 31.5 hours bi-weekly
  - Typing estimates eliminated
- Contract Modifications
  - Each office tech saves 42 minutes per Mod
  - Typing contract modifications eliminated

FieldManager FieldBook Impact (cont.)

- Error rectification
  - Office techs save
    - 82 minutes per IDR error
    - 130 minutes per estimate error
    - 114 minutes per contract modification error
- Multiple user access
- Inquiries
- Total estimated hands-on savings benefit of 453,532 hours per year

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Financial Impact

Investment

- Initial 1998 production release - $5.1 million:
  - $3.4 million by MDOT
  - $1.7 million by Info Tech and other DOTs
- MDOT's annual maintenance and other related cost - $767,000

Return (1998-2001)

- Saves Michigan $21.9 million per year in reduced hands-on time:
- Many, many soft benefits including:
  - Much more thorough and accurate project documentation
  - Dramatic reduction of paperwork
  - Far fewer errors
  - Standardized process statewide
  - More timely information

Beneficiaries

- MDOT TSCs, project offices, region offices
- Local government agencies
- Private engineering consultant firms
- MDOT central office (several divisions)
- Auditors
- Federal Highway Administration (FHWA)
- Road/bridge construction contractors
- Taxpayers
- Traveling public
- Organizations outside of Michigan using software

Implications of FieldManager Model for Public Sector

- Better development model
- Public/private partnership
- Makes value available at low cost

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FieldManager Beyond Michigan

MDOT / Info Tech Partnership

Partnership History

- Construction Project Record Keeping System (CPRKS) was used by MDOT and some locals
- CPRKS successful but major upgrade needed:
  - Not Y2K compliant
  - Old technology (was DOS, pen based, stand-alone, etc.,)
  - Desired significant expansion of functionality
- Contracted with Info Tech to help develop CPRKS V4
- Info Tech also owned and marketed FieldBook

Partnership History (cont.)

- Knew we had product worthy of potential use by others
- MDOT's business is building roads – not marketing software
- Made good business sense to combine our efforts with Info Tech's
- MDOT and Info Tech developed innovative partnership agreement to merge CPRKS V4 and FieldBook

Partnership History (cont.)

- Had to overcome challenges before finalizing agreement:
  - Negotiate contract that was fair for both MDOT and Info Tech (devil is in the details)
  - Convince “nay sayers” (there were many as this was not business as usual in government)
  - Agreement had to stand up to public scrutiny
- Eventually achieved success - the result was FieldManager

Partnership Agreement

- Info Tech received:
  - 50% ownership
  - Marketing rights
- MDOT received:
  - Additional functionality
  - Technical support
  - Future upgrades / software improvements
  - Royalties
  - License free use for locals

Additional Functionality

- Estimated at 22% of first FieldManager release
- Department / user community deriving many benefits
- Development value estimated at $1.1 million

Technical Support

- MDOT does not have to dedicate staff or contract with an outside firm to perform this function
- Value estimated at $80,000 per year

Future Upgrades/Software Improvements

- Allows MDOT to take advantage of investments made by other organizations
- Help ensure FieldManager will continue to evolve and grow
- Help ensure a more stable product due to increased user base
- Help ensure software will continue to meet exceptional quality standards because Info Tech has added monetary incentive
- Allows MDOT to take advantage of business improvements based on input and ideas from other state DOTs

Royalties

- MDOT recoups some investment costs
- Value is dependent on how well FieldManager sells in the market place

Partnership Results

- Combined the strengths of government and the private sector:
  - Built in motivation for each party to excel
  - Combines expertise of each organization
  - FieldManager reaps best of both worlds
  - FieldManager far more powerful and robust than either organization could have developed on their own

Key Success Factors

- Development
  - Set up a technical advisory group of representative users to define product enhancements
  - Conduct user satisfaction surveys on a regular basis
  - Posting of product information, incident reports, and product updates to a FieldManager web site -- an open exchange of information
- Marketing
  - Achieved acceptance by AASHTO as an AASHTOWare licensed product available through the AASHTO Catalog
  - Established relationships with key organizations at the local, state, regional, and national level including American Council of Engineering Companies, American Public Works Association, Bureau of Indian Affairs

Market Results – In 2 Years

- Current states
  - AR, IA, ME, MI, OK, WI, AK
  - Springboard to the locals and consultants
  - Provided to all locals in MI, IA and WI for state let contracts
- Active programs or training in:
  - Butler County, OH – Managed $100M+ project
  - Idaho and Alaska DOTs, Nevada potential
  - City of Cincinnati
  - City of Minneapolis, MN
  - Macomb County, MI
  - Bureau of Indian Affairs (WI and OK)
  - BHMulkey Consultants, NC
  - St. Peters, MO
  - Tulsa, OK

Vision for the Future

- Self sustaining product
  - Several states have already invested in product improvements
  - New users work to further improve the product, benefiting all
  - Sufficient funds for continued maintenance and enhancements
- New licensing models
  - Reaching more users with lower pricing from site licenses
- New platforms – beyond FieldNet and FieldPad
- Integration with other products
  - Civil rights software, engineering and design software, SiteManager
- New Markets
  - Bureau of Indian Affairs and other national agencies with local stakeholders
  - International opportunities

Challenges

- Organizational issues
- Contract administration
- Complexity of agreement
- License arrangements
- Finding a partner
- Project management focus

Other Approaches

- Users pay fees
  - Bid Express
- Joint/Shared Development with other states
  - AASHTOWare*
  - Trns•port

*American Association of State Highway and Transportation Officials (AASHTO)

Questions about FieldManager?

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